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AUTHOR	Jacobs, T. O.
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ABSTRACT

Questionnaires are prepared by many people who have not had specialized training and experience in survey techniques. This booklet was prepared to assist such nonspecialists in the preparation of efficient and useful questionnaires by providing a brief, readable guide for the development of questions for management decisions. This discussion is concerned primarily with kinds of questions that elicit information about attitudes and opinions. The first step in developing a good questionnaire is to examine the context in which the data derived from the questionnaire will be used. The kinds of decisions to be made, the characteristics of the respondents, and the needs of those requesting the information are important contextual aspects. Secondly, item formats such as open-ended questions, two-way questions, and multiple choice questions must be considered along with some of the problems inherent in using the various item types. The items designed and selected for inclusion in the questionnaire should be unambiguous, appropriate for the respondents, and not misleading. Pretesting the questionnaire affords a situation in which ineffective or poorly worded items can be discarded or modified. Suggestions are presented for accomplishing each phase of questionnaire design. (EH)

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Developing Questionnaire Items:

How To Do It Well

T.O. Jacobs

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FOREWORD

Policy, purchase, and other management decisions are often made using information from consumers, students, workers, teachers, or other groups with experimental tryout or other, longer-term relevant experience. Usually such information comes from a written questionnaire directed to a sample of the group.

Questionnaires are prepared by many people who have not had specialized training and experience in survey techniques. This booklet was prepared to assist such nonspecialists in the preparation of efficient and useful questionnaires by providing a brief, readable guide for the development of questions for *management decisions* (questions for achievement or other tests for individual assessment are not considered in this booklet).

This material is based upon work done at HumRRO Division No. 4, Columbus, Georgia, as part of a research program performed under contract to the Department of the Army. That work was presented in a booklet specifically prepared for Army use, and issued as a HumRRO Research Product, *A Guide for Developing Questionnaire Items*, January 1970.

Meredith P. Crawford
President
Human Resources Research Organization

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Developing Questionnaire Items:

How To Do It Well

INTRODUCTION

The purpose of this booklet is to talk about how to ask questions. This is not as easy as it sounds. The object is to ask the *right* question, and to ask it in such a way that you will find out what you need to know.

There are a great many pitfalls in asking questions. Not all of them will be considered here. Further, this discussion will deal mainly with the kinds of questions that try to get information from a person or try to find out how he or she feels about something—for example, what was learned in a trial of new office equipment, or how a person feels about volunteering for military service. There are rules for how best to ask this kind of question. Many of these rules will also apply to the kind of test that is given after a course of instruction—that is, an achievement test—but no attempt will be made to cover all the problems and techniques that are important in developing that kind of test.

Payne[1] asked a sample of researchers what they saw as the principal problems with research methods. He reported the following results:

Improperly worded questionnaires	74%
Faulty interpretation	58%
Inadequacy of samples	52%
Improper statistical methods	44%
Presentation of results without supporting data	41%

So, this booklet will concentrate on what seems to be the largest part of the problem—writing good questions. This is not the total solution to all research criticisms mentioned, but, as three experts in every four would indicate, it is a good start in the right direction.

[1] Stanley L. Payne. *The Art of Asking Questions*. Princeton University Press, Princeton, N.J., 1951.

Four Sections, including a final statement summarizing the main "working suggestions," will follow this introduction:

- Section I: Certain kinds of questions you would ask yourself when formulating a questionnaire. This is to make sure that you know what you are asking about.

- Section II: A discussion of types of questions, together with their relative advantages and disadvantages. Some types of questions can do certain kinds of things well but do other things fairly poorly.

- Section III: A discussion of the actual steps in building a questionnaire, including some reasonably well tested do's and don'ts.

- Section IV: A check list that will help avoid many of the problems involved in writing good questions.

Section 1

ASK YOURSELF

The phrase "systems approach" is almost a sacred cow these days—if anything is done using a "systems approach," it can't be all bad. There *is* some merit to taking a systems approach to asking questions. Asking yourself the following five questions will lay the foundation for a far more valuable questionnaire than you could otherwise produce.

1. Who needs the information?

The reason for asking this question is so straightforward that it may seem trivial. However, it is a factor that can be overlooked, and a lot depends on it. Organizations have a machinery for transmitting communications within their own structure. The term usually applied in the military, for example, is "chain of command." The requirement for the information *you* are going to collect may have come from two or three levels above your own, and something may have been lost in the communication process.

At any rate, there are certain things you must be sure about, and knowing who needs the information will provide you a source in the event you find you cannot answer the remaining four questions. This leads to the next question.

2. What decision will be made based on your information?

The answer to this question will tell you in part why the information is needed and will lay the foundation for the answers to the next question. This is where the systems approach really starts to make a difference. Depending on what decision is going to be made, some kinds of information will make a difference, and other kinds will not.

Suppose, for example, you are preparing to collect information as a part of a test comparing a new item of equipment with an old standard item. The nature of the decision to be made is clear enough. It will be either selection of the new equipment or retention of the old. Also, the test of the new equipment will probably be based on an analysis of the requirements or a statement of needs. Examination of such existing

documentation—why the new equipment is being considered—will usually give you a good start for developing your questions.

Of course, there are other reasons in which an explicit statement of the impending decision may not lead as easily to a good statement of your information needs. However, even in these areas, knowledge of the decision under consideration is an essential key to *defining* information needs—the next step.

What facts will affect the decision?

As you can see, the art of asking good questions may be closely related to designing good tests. In order to test new equipment well, it is necessary to expose that equipment to the kind of environment and use for which it has been designed. This includes use—and sometimes abuse—by the type of individual who will use it operationally.

When you need the information for something less straightforward than an equipment test, the task of finding out what facts will have a significant bearing on the problem is not always easy and will sometimes be downright difficult. Sometimes the decision maker himself may be unsure of the full range of information that will be needed to make a good decision. In this case, learning what kind of facts will help is part of the problem. If this happens, you will find it useful to consult with colleagues, asking, in essence, "What kinds of things would you want to know if you had this decision to make?" *It will help to make a list of elements of information that you feel will be needed as you go.* If you have time, you may want to have this list reviewed before you start developing questions.

Clearly, the real question is, "What information will make a significant difference to the decision maker?" If you collect unnecessary information, or fail to get the needed information, your time will have been put to no good use, at the very least. A considerably more serious possibility is that the decision may get made on the basis of irrelevant information. This leads to our fourth question.

4. Whom are you asking?

To get good information, not only must you ask a good question, but you also must ask it of someone who has the answer. This ties in

with the design of tes's, which exposes proper test subjects to the proper conditions so that they will then be able to tell you the kind of information you want to know. In fact, one basic objective of a good equipment test is to qualify the people who will take the test to be able to answer the questions that need to be asked. It is also important to be sure that the appropriate kind of test subject is used.

Sometimes it is necessary to get information without the benefit of a carefully designed test. When this is so, it is especially important to be sure you are asking the right person for the information, in terms of whether he is qualified to answer and whether he has the information you need, if qualified. This may even require you, in some cases, actually to seek out an expert to be certain of getting good answers.

It does not require much knowledge of how to ask questions to know that a question about drilling for oil should not be asked of a bookkeeper for the oil company. However, sometimes the problem is more subtle. Consider the following question:

Example 1

Was the TOE of your unit suitable for the missions assigned?

Yes _____

No _____

This question was asked of noncommissioned officers in Vietnam. While it appeared to be a perfectly reasonable question to the officer who wrote it, he had not stopped to think that NCOs generally have not been trained to think in terms of how Tables of Organization and Equipment are designed to produce mission effectiveness. It is quite possible that many noncommissioned officers answered this question on the basis of whether they thought the missions assigned to them were reasonable missions, which is quite a different emphasis than that requested in the question.

A very important consideration is the frame of reference the test subject will be using in answering the question. Frame of reference was the stumbling block in the example just given, in which the NCOs' frame of reference is simply different from that of the officer who worded the question. Frame of reference will be discussed in greater length later.

Another topic that will be considered is whether the test subject can understand what you want in a question. The Army has an expression that is time-worn but to the point: KISS. This stands for "Keep it simple stupid!" We will return to this topic later, too.

5. What are the consequences of a wrong answer?

While this basically is an administrative question, it has an important bearing on questionnaire and test design. Clearly, if it makes little difference which one of two alternatives is chosen, it makes little difference whether the information is collected. On the other hand, if there is a chance that an organization could save millions of dollars through the use of a more effective block of training, or might spend millions of dollars for a new piece of equipment that is no better than the old, it is necessary to design tests very well, and ask the right questions with great care.

Also, in general, the more important the decision or the more precise the needed information, the greater the number of test subjects needed in order to provide information of sufficiently high reliability. Again, this pertains more to test design and the statistical analysis of the data collected. The important point for the present discussion is simply that, when you ask questions, you must have a feel for how important it is that the answers are right.

Section II

QUESTION TYPES

Only three major types of questions will be considered here. There are many variants in handling questions, and it will almost always be possible for you to get the information you need with one or more of these three types. The types are:

- Open-ended
- Two-way
- Multiple-choice

In deciding which type you ought to use, you will need to consider the following factors:

(1) How much *you* know about the range of possible answers.

(2) How much time your respondents have, or are willing to give you.

(3) The number of subjects needed to get satisfactory reliability, and the resulting requirements for data analysis.

Open-Ended Questions

An example of an open-ended question is shown below.

Example 2

What do you think of the short income tax form?

One advantage of the open-ended question is immediately apparent. It is very easy to ask. This is useful when the question writer does not know or is not certain about the entire range of possible alternative answers. By using this type of question and by asking enough respondents, you can usually discover most of the possibilities.

However, open-ended questions have some disadvantages:

- It usually will take a good deal more time for you to get answers, if you expect the answers to be written. In fact, depending on the motivation of your respondent, he or she may not give a full answer, or any answer at all, after seeing how much work it is going to be.

- Open-ended questions demand a lot of analysis time. For a question asker on a crash project, the only thing that could be worse than failing to get enough information would be getting so much that he is buried by it. Open-ended questions, answered by motivated respondents, can overwhelm data analysts. They usually cannot be handled by machine analysis methods (e.g., computer data processing methods) without lengthy preliminary steps. If your test requires a fairly large number of subjects, or a fairly large number of questions, the data analysis problem can grow into a major project unless some other form of question is used.

- Responses to an open-ended question usually must be analyzed by someone who has substantial knowledge about the question's content, as opposed to a statistical clerk, for example. This may result in imposing another work load on someone who is already hard pressed for time.

- Open-ended questions may be easier to misinterpret, because the respondent does not have a set of choices

available which might in themselves guide him toward the proper frame of reference. For instance, the question in Example 3 is given by Payne:

Example 3

Why do you buy the 50-cent motor oil instead of the 70-cent oil?

A fairly obvious reason for buying 50-cent oil instead of 70-cent oil is that it is cheaper. However, many respondents may feel this is so obvious that the person asking the question wants a different kind of answer. Thus, the question may fail to produce valid responses.

In summary, the open-ended question is easy to ask but it has several disadvantages; in particular, it produces data that are time-consuming to analyze. Sometimes, a good procedure is to use an open-ended question with a small number of respondents in order to find out what the range of alternatives is. Armed with this knowledge, you may then be able to construct good multiple-choice questions that will be faster to administer and easier to analyze.

Two-Way Questions

The two-way question is just what it says—a question that permits choosing one of two alternatives. Example 4 is a two-way question.

Example 4

Which do you prefer, the ABC typewriter or the XYZ typewriter? (Check one)

ABC typewriter _____

XYZ typewriter _____

An advantage is immediately apparent. Your respondent can merely check one answer and go on to the next question. It is a relatively easy type of question to develop and permits rapid analysis.

However, it also has disadvantages. First, two alternatives might not be enough for some types of questions. Second, there may be a tendency for your respondents to choose an answer based on what is known as a *response set*. That is, some people tend to choose the first answer they see, while others may choose the last answer they see. A way of avoiding this problem with the two-way question is to print half the questionnaires with the question in the form shown in Example 4, and the other half with *the order of mention* of the two typewriters reversed. Sometimes this will make a difference and sometimes not, depending to a substantial extent on the number of words in the alternatives. However, it is a good precaution to take even with short alternatives like those used in Example 4 on the preceding page.

Another common fault of the two-way question is the presentation of alternatives that overlap (not mutually exclusive). Example 5 has overlapping alternatives.

Example 5

Is the ABC typewriter a good typewriter, or could it be improved?

Good typewriter _____

Could be improved _____

While this question has more than one problem, it is apparent that it is quite possible that the ABC typewriter is *both* a good typewriter and could be improved. Almost anything can be improved. Thus, the second choice ought to be extremely popular if your respondents think carefully about it, without regard to the merits of the typewriter as such.

In summary, for some purposes the two-way question may be an improvement over the open-ended question, in that it provides for faster and more economical analysis of data, which means that data can be obtained from more respondents. However, it does require a bit more care in its development. Further, it is also subject to some of the faults of multiple-choice questions, as well as some peculiar ones of its own.

Multiple-Choice Questions

This type of question has the advantage of being easily scored, which means that data analysis is a relatively inexpensive process requiring no special content expertise. It also requires considerably less time per respondent answer than the open-ended question. Further, it does not require respondents to work so hard to give you the information you need, which means they are more likely to try to do what you want.

Perhaps an even more significant advantage is that it puts all persons on the same footing when answering. That is, each person will be able to consider the same range of alternatives when choosing his answer. On the other hand, this may be a major disadvantage for the question maker, because it requires him to know all the significant possible alternatives at the time he formulates the question.

One of the big problems with multiple-choice questions is being certain that the answer you receive to your question is a real answer. This statement may sound ridiculous, but the fact of the matter is that *a very deliberate and well thought-out response on a paper-and-pencil multiple-choice test looks very similar to one that has received no thought at all.* That is, both have check marks, circles, blacked-out spaces, etc. However, there are a few things thay you can do to make it more likely that the answers you get are well thought out.

As was noted in discussing the two-way question, people have a tendency when choosing answers to be influenced by "response set." With multiple-choice questions, for example, they tend to choose answers from the middle of the list if the list consists of numbers, and from either the top or the bottom of the list if the alternatives are fairly lengthy expressions of ideas. A way to combat this for numbers is to use different forms of the question with the alternatives in a different order, for different parts of your sample.[1] For alternatives presenting ideas rather than numbers, this same approach can be used, in addition to keeping the number of words in each alternative small.

Another kind of error is the inclusion of an alternative that is obviously very desirable. Example 6 contains an example of a socially undesirable response.

[1] Where the number of respondents and/or questions is large, the added burden during data reduction can often be handled by computer file editing routines which "rearrange" the alternatives for analysis.

Example 6

What percentage of the time were the enemy targets:

a. Exactly located and fired at _____ %

b. Closely located and fired at _____ %

c. Location unknown but fired at hoping to suppress the enemy _____ %

Alternative c, if the soldier respondent thinks carefully about it, might be seen as implying a lower degree of skill in locating the enemy than might be desirable. In thinking about the item, he might see that he could check b instead, and still live with his conscience. Admittedly, he did not see the enemy but he can be fairly well convinced that the enemy was "closely located"—that is, he was not firing purely random shots as alternative c might imply. Thus, the pure social desirability of the alternatives ought to result in higher percentages reported for b, and lower percentages for c.

Example 7 shows another form of this same problem. If a motorcyclist is asked this question, he almost certainly will choose protection as a helmet's most important characteristic.

Example 7

What do you consider the most important characteristic of a good motorcycle helmet?

a. Comfort _____

b. Stability _____

c. Attractive appearance _____

d. Protection _____

e. Weight _____

However, if the test helmet must meet the same safety requirements as the standard helmet, *the fact that protection is desired by the*

cyclist is irrelevant. The test helmet would be failed anyway in other testing if its protection capabilities were not adequate. Asking the cyclist this question, then, adds no new information. Indeed, it obscures possibly important additional factors that would have appeared as second choices.

This gets back to the requirement for a systems approach to the asking of questions, and to the "So what?" you must ask about your own questions. In this particular case, the answer to "So what?" would be "Nothing." Either this question should not be asked, or it should be asked in a way that will give information about what the motorcyclist considers of next importance after protection. This can be done either by leaving out "protection," or by asking respondents to *rank* the alternatives.

In summary, multiple-choice tests are easy to administer and fast to score. They are especially useful for dealing with a large number of test subjects. However, the questions and their alternatives must be worded with very great care, or the information obtained from them may not be valid. A particular requirement for multiple-choice items is that the question writer must know the full range of significant alternatives. However, he can help himself in that respect by asking a few subjects to respond to open-ended questions in advance, and can give himself some insurance by providing an open-ended alternative which can be handled in the data analysis through special processing, as is shown in Example 8.

Example 8

How much education have you had?

a. Did not finish high school. _____
b. Finished high school, but no college. _____
c. Some college, but did not graduate. _____
d. Graduated from college, but nothing beyond. _____
e. Some graduate work. _____
f. Other (please list) _____

_____

_____

Section III

FRAMING THE QUESTIONS

The general considerations discussed in the preceding two sections should help in giving you an initial idea about the extent of the questions you want to ask and the way you want to ask them. The question of what information is needed should have been answered by the systems examination of the requirement. This should have provided a comprehensive list of all the points on which information is required for the decision that is going to be made. The brief consideration of question types should have given you an idea of how you want to ask your questions.

From this point on, the development of the questionnaire consists of initial framing and review of questions, and pretesting.

The Initial Development of the Question

Let us assume that you have selected a particular issue or element of information about which you now are going to frame a question. Here are some cautions that can help you in writing questions.

1. *Don't assume your respondent will know what you are talking about, just because you do.*

Example 9, taken from Payne, illustrates this point.

Example 9

Which do you prefer, dichotomous or open questions?

The odds are that a fairly substantial number of people would not be able to define these two question types for you. Nevertheless, if you ask them the question in Example 9, they will be happy to choose. The point is that people will not volunteer their ignorance of something, though they may admit it if you ask them.

However, this caution goes beyond ignorance of an issue. Another problem is that the specialist wording the question may simply have an unusual command of his own language. Scientific and bureaucratic jargon has often been criticized. There are other kinds of jargon, too. The question asker has a responsibility to make himself understood.

In case you need to screen out individuals who do not have an adequate basis for providing the information you need, one way to do this is to include one or two pure information questions; then discard questionnaire returns from respondents who cannot answer the information questions correctly.

2. *Don't leave yourself wondering: What did he mean by that answer?*

Sometimes, a question can be worded so that it is impossible to know what was meant by a given answer. Example 10 illustrates this.

Example 10

In an automatic shift car, should you brake with the left foot or the right foot?

Yes _____

No _____

If the student answers Yes, what would you say he meant? It is unlikely that you would write a question with such obviously ambiguous response alternative, but it does illustrate the problem.

3. *Don't ask people to go against their basic inclinations.*

This is a very vague statement and it applies to many things. An example is that people generally are reluctant to criticize, though they enjoy giving praise. (There are some exceptions to this rule, but it is generally true.) Thus, a question that allows a respondent to avoid being critical will bias answers.

Similarly, a question that leads him to criticize, especially on fundamental issues, will bias responses because he will not wish to do so. Example 11 illustrates this.

Example 11

Were the actions of your group generally correct and in accordance with the accepted beliefs of your church?

Yes _____

No _____

If No, why not? _____

_____

This question asks the respondent either to criticize the action of his own group or to avoid being critical. Some hardy souls might answer No, if they have an important point to make, feeling that the explanation can put them back on good footing. However, a substantial number of others will wash their hands of the whole affair and answer Yes, no matter how they feel on the subject.

4. *Don't "lead."*

You have probably heard, several times, the expression, "People are no d___ good!" The problem with this is that it simply is not true. People generally are reasonably cooperative and like to help. If they can figure out what you want, they will try to give it to you. Example 12 contains two illustrations of leading.

Example 12

Do you think students are pretty highly motivated in this class?

Yes _____

No _____

Do they take pretty good notes during the instructor's lectures?

Yes _____

No _____

The impression one would be likely to receive from analysis of the answers is that students are generally highly motivated and appear to take pretty good notes during the instructor's lectures. (These questions also suffer from allowing respondents to avoid criticizing the situation, ar.d of allowing them to make socially desirable answers as well. This is a problem that will be discussed later.)

5. *Don't confuse or lose the respondent.*

The language you use in framing your question will have a lot to do not only with the quality of the information your respondent gives you, but also with how he feels about giving it. One of the easiest ways to create a problem is to use a confusing question such as that given in Example 13 (taken from Payne).

Example 13

Are you against not having prohibition on non-week days, including Sunday and holidays?

Yes _____

No _____

This illustration might mean anything. However, it is not necessary to use double negatives to confuse someone. It can be done more simply, merely by using words he cannot understand, as shown in Example 14.

Example 14

What countermeasures should yo·· take to preclude having an automobile accident from a blowout?

a. With a heavy sedan _____

_____

_____

b. With a lighter compact _____

_____

_____

Of course, this question has additional problems other than the fact that "countermeasures" and "preclude" are words that might not be understood by everyone. One such problem is that a respondent who knows all the words still may not know whether your emphasis is on *preventing blowouts* or *preventing accidents after experiencing blowouts.* There is a difference, and your data will be a mixture of both interpretations if the question is not clear.

Example 15 shows how a respondent can be asked for information he may not be able to give.

Example 15

What special techniques did your supervisor teach you to use with the following types of office equipment? (List only actions *not now covered* by our company operating manuals.)

a. Flexowriters _____
b. Duplicating machines _____
c. Electrostatic copiers _____

This particular source of trouble, as far as this point is concerned, comes from the section in parentheses. While the intention of the question writer is fairly straightforward, he has virtually eliminated most respondents because most, unlike the author of the question, are probably not familiar enough with company operating manuals to know what is *not* included.

Of course, two other problems should be mentioned about this particular item. First, the word "actions" is ambiguous. It has two meanings, and it is difficult to know which one is correct in relation to the sentence preceding it. Second, this is an open-ended question with a vengeance. Given a motivated respondent in a highly innovative organization, it is possible that an answer to this single question could take hours. It clearly is a question that is more convenient for the writer—at the expense of the respondent.

Finally, Example 16 shows that several different methods of confusing the respondent can be combined in the same question. The first problem is in the wording of the initial question.

Example 16

When engaging enemy targets, seen or suspected, at ranges from 0 to 50 meters and under extreme time pressure, what type of fire would you use?

(203) a. Semiautomatic _____; automatic _____

(205) b. Carefully aimed_____; quickly aimed using the sights_____; pointing type not using sights fired from the shoulder_____; pointing type underarm_____.

(200) c. Single rounds_____; 2-3 round bursts_____; 3-5 round bursts_____; 5-10 round bursts_____; 20 round burst hose effect_____.

(178) d. Fire at single targets_____; fire at groups of personnel_____; fire at the area_____.

(186) e. Shoot first then take cover_____; take cover then shoot_____; wait for orders_____.

It is doubtful that the average infantry soldier, when reading this, would really have grasped all the conditions stated.

This confusion might be reduced by rewording, perhaps in this way:

> What type of fire would you use when engaging *very close* targets under great time pressure?

The plan here is to make the question more understandable, and also to break the very complex initial question into parts that can be handled more easily.

A second fault with Example 16 is that it is not really clear that the soldier is *to respond to each line.* In this example, the numbers at the left of each line show how many answers were given to all the possible choices on that line when this question was actually used. It is clear that while almost everyone grasped the idea that he should answer more than one time, not everyone answered the same number of times. However, it is not certain whether some answered too many or some too few, or both. Difficulties like this can be avoided by giving the respondent explicit directions, and by making his job more simple than this question did.

6. *Don't make your questions too long.*

This, and the preceding point, are similar considerations when writing questions. The more words a question has and the bigger the words are, the more confusing the question is likely to be. Example 17 illustrates this problem.

Example 17

In the highly specialized counterinsurgency environment represented by the basically internecine affair in Vietnam, what would you say should represent the basic essence of our rationale for continuation of our involvement?

a. Prolongation of attrition of enemy forces, in order to reduce the level of threat to South Vietnam. _____

b. Orderly transfer of military responsibility to the host country, in order to produce stabilized competency to deal with any future internal disturbances. _____

Several things are wrong with this question. However, it is unlikely that the average respondent would be bothered by them. The massive words by themselves very probably would convince a subject to stop reading at an early point. He or she might then choose an alternative by flipping an unbiased coin. An even more attractive choice might be just to go to the next item.

Worst of all, the respondent probably will choose one alternative, but not in an unbiased manner, so that your item not only will fail to obtain valid information, but *will* obtain invalid information.

The following four "word" rules, adopted from Payne, provide a very useful guidance:

- Does the word mean what you intended?

- Does the word have any other meanings?
- If so, does the context make the intended meaning clear?
- Is a simpler word or phrase suggested in the dictionary?

Perhaps a fifth word rule might be:

- Can you get along without it?

The point of this caution about choosing words is that it is very easy to get incorrect information on a multiple-choice test by giving your respondent a choice he cannot understand. Most people will cooperate. They will choose anyway.

When actually writing questions, you should carefully screen each question for words that might be unfamiliar to the respondents you intend to use. Pretesting, which will be discussed later, can also provide an opportunity to look for difficult words. A good technique for pretesting is to have the respondent read the question aloud to you and then tell you what it means. Any difficulties at all in the pretest should cause danger signals to fly.

7. *Don't use "All-American" or "giveaway" words.*

This caution is related to the one just discussed. Example 18 shows the use of two "dead giveaway" words which would lead the careful thinker to respond in the negative, and others, thinking less carefully, to respond in the positive.

Example 18

Do you feel that your department did its best in all aspects of its work over the past six months?

Yes _____

No _____

One wonders if any group of employees can do their actual best, except very rarely. The word *all* makes this an even more difficult question to answer positively. You probably have heard the expression: All statements containing "all" are false, including this one.

The effect of a question like that shown in Example 18 is that it may separate one kind of thinker from another, without regard to the kind of information you are trying to get.

8. *Don't load your questions.*

Loading questions is a good deal like loading dice. Either way, you can be pretty sure in advance what kind of result you are going to get. There are many different ways of loading questions. Of those given by Payne, the following appear to be the most likely pitfalls for present purposes.

a. The use of stereotypes. If motherhood and sin were on a ballot, most people would vote for motherhood and against sin. Example 19 shows a motherhood type of question.

Example 19

Did you clean your weapon regularly in Vietnam?

Yes _____

No _____

As you can see, this kind of question is not only loaded; it's very much like leading, as illustrated in Example 12.

b. Recourse to the status quo. People have a substantial tendency to keep things the way they are, unless something is really wrong. Example 20 shows a question that should have been worded in a different way to avoid this problem.

Example 20

Do you feel that the end-of-course test is satisfactory as it is, or should it be changed?

a. Satisfactory as is _____

b. Should be changed _____

Answers to this question should be suspect merely on the basis of the tendency people have to keep things the way they are.

c. Unbalanced alternatives. Example 21 shows loading of a different type. In the first part of this example, analysis of the available alternatives leaves the impression that the writer of the question thinks that not all libraries should have a complete reference room. Analysis of the alternatives in the second part of the example leads to the certain conclusion that the writer of the question believes there should be a copying machine in the main library.

Example 21

Should every branch of the city public library have a reference room with a stock identical to the main library?

Yes _____

No _____

If No, list those branches that should _____

_____

How many of the city's libraries should have some kind of copying machine?

a. Main library only. _____

b. Main library plus branches serving the central city. _____

c. Main library and several branches serving the suburbs. _____

d. Main library plus all branches. _____

This leads to the observation that any bias on the part of the question writer himself *just might* be one source of loading. It turns out that this is very often true, and most of the time is not recognized by the writer at all. So a good check here is to ask yourself what you think, what someone who disagrees with you would think, and *whether your alternatives would give him a good chance to present his views.*

Pretesting the Questionnaire

Even the most careful screening will not find every problem with all questions. Pretesting thus is very important, to find those overlooked problems that would reduce the validity of the information you will get. However, just *any* pretest will not do. You must know how to pretest the items, and what to look for.

Perhaps of first importance, the pretest respondents should be representative of your eventual target audience. That is, if a test is going to be run using high school freshmen, you would not want to pretest your questionnaire with a sample of university graduate students. Their ability levels would be grossly different. Similarly, if your eventual sample is to be apprentices in one of the trades, you would not want to pretest with experienced journeymen whose experience levels would be grossly different.

A second point is that the pretest is more useful if it is conducted by someone who knows the subject area. If the question writer himself, for example, conducts the pretest, using pretest respondents one at a time, he can often obtain useful information by asking for the question to be read and then explained. Misunderstandings become very apparent through this process.

Another useful technique is to ask the respondent to explain what he means by a choice, or to give his reason for the choice, even though these questions will be not asked in the main administration of the questionnaire. These questions will frequently reveal incorrect assumptions and possible rationales that the question writer never dreamed possible.

During pretesting of the questionnaire, a high proportion of respondents giving no answer or a "don't know" response should raise danger flags. However, especially for a multiple-choice question, a low

number of "don't know" responses does not guarantee that the questions are good. By recourse to the methods mentioned in the preceding paragraph, the pretester can come closer to guaranteeing that the questions are good.

Pretesting may seem a waste of time, especially when the author may have asked several people in his own office to critique the questions, or perhaps even has asked a questionnaire specialist to critique it. However, it will usually be an investment that is well worthwhile. *It is crucial if the decision that will result from the information is important.*

Section IV
A CHECK LIST

In the preceding Sections, we have talked first about the kind of information you need to establish as a foundation before you start writing questions, about the types of questions among which you may choose, and about the kinds of problems that may confront you as you develop the questions for your questionnaire. The following check list may be of use to you both as a review and as a way of refreshing your memory as you actually work through the steps of developing a questionnaire instrument.

A. The Foundation

1. Find out who needs the information.

2. Learn in specific terms what decisions are going to be made on the basis of your information.

3. Outline the facts that will be needed to make those decisions.

4. Identify respondents who have the information you need.

5. Use a procedure that will provide information of sufficient reliability.

B. The Question Type

1. Open-ended questions

   a. Before using an open-ended question, see whether it can be replaced with a multiple-choice question. (Sometimes it cannot.)

   b. Before using an open-ended question, be certain that you will have enough time to analyze the data.

c. Make a particularly strong effort to avoid open-ended questions when the respondent does not have education beyond the eighth-grade level. (Some would have said high school level.)

2. Two-way questions

   a. Be certain that two alternatives are enough.

   b. Try to use two forms of the question, in two different questionnaires, with the order of appearance of the alternatives reversed from one to the other. (This will counter any tendency people may have to choose the first or last answer they see.)

   c. Be certain that the alternatives do not overlap.

   d. Be certain that you will know what "was really meant" by each answer.

3. Multiple-choice questions

   a. Check to be certain that you have thought of all reasonable alternatives. (Cross check this during pretesting.)

   b. If you are asking people to choose from a list of numbers, be certain that "response set" tendencies to choose from the middle of the list will not bias responses to your question. (Consider using different forms of the question, with alternatives in different order, for different parts of your sample.)

   c. Similarly, if you have alternatives that are lengthy, make sure the tendency to choose from the beginning or end of the list does not bias your answers. (Again, consider using different forms, and keep the number of words in each response as low as possible.)

   d. Be certain the item does not include an alternative that will overwhelm the other alternatives.

C. Writing Questions

1. Initial development

a. Don't use terms or ask questions about topics that your respondent will not know about.

b. Make sure that any answer the respondent makes will have a clear meaning to you.

c. Don't ask people to make undesirable choices.

d. Don't lead your respondents by wording the item so they will know what you want.

e. Make the item and the choices short, and use simple words.

f. Make certain the item clearly specifies what you want the respondent to do.

g. Don't ask respondents to do several things in one item.

h. Don't ask for several kinds of information in one item.

i. Don't use tricky wording, especially double negatives.

j. Don't ask for fine distinctions, unless you *know* they will be meaningful to your respondents.

k. Don't word your question in such a way that the balance of responses will unavoidably be in one direction (loading).

l. Be sure your answers are worded so that someone who disagrees with you can find an answer presenting his side of the issue.

m. Screen your items for "All-American" words or "dead give-away" words.

2. Pretesting

a. For pretesting, use subjects representative of your eventual target.

b. Ask your respondent to provide both an answer and a reason for the answer.

c. Ask whether there are other answers that could have been given.

3. One last look

a. Re-read each equestion, and apply the "so what" criterion. (Will this information really make a difference to the decision maker?)

b. Re-examine each of the elements of information originally identified as necessary, and be sure that there is at least one question on each, and that the responses will provide a clear basis for that part of the decision.

c. Read the questionnaire as a whole to check that:

(1) The flow of items as a whole will not confuse the respondent.

(2) The flow of items as a whole will not tip him off as to what answer *you* think is correct.

Using this check list and the thoughts contained in the preceding sections will not guarantee a successful questionnaire or a successful test. However, it is hoped that they will make the job a little faster, or a little easier, and a little better.